EXHIBIT 6
DATE 2/16/18
HB 468

EXHIBIT 6
DATE 2/16/11
HB 468

MONTANA DNRC
FORESTRY DIVISION
FIRE & AVIATION MANAGEMENT BUREAU
AIR OPERATIONS SECTION

DNRC HELICOPTER PILOT LIST 2011

Pilot Name	Cert.	Total Hours	Heli Hours	VTR	Mil	Inst	Yrs
Al Aamold	Comm	7570	6740	Y	Y	Y	43
Jon Albertson	ATP/CFI	7720	2420	Y	Y	Y	22
Tal Williams	Comm	4830	4580	Y	Y	Y	24
Chuck Brenton	Comm/CFI	8890	8890	Y	Y	Y	29
Chris Bryce	Comm	2450	2410	Y	Y	Y	12
Tom Mendyke	Comm	3420	3420	Y	Y	Y	25
Don Sneck	Comm	3770	3620	Y	Y	Y	36
Bob Witham	Comm	11420	7710	Y	Y	Y	46
Randy Yeager	Comm/CFI	9610	5110	Y	Y	Y	41

Comm - Commercial Pilot, ATP - Airline Transport Pilot, CFI – Certified Flight Instructor,
Mil - Military Training, VTR – Long line, Inst – Instrument Rated, Yrs - Years Experience

DNRC FIXED-WING PILOT LIST 2011

Pilot Name	Cert.	Total Hours	F/W hours	Mil	Avn Yrs
Dick Brady	Comm	5370	5220	N	36
Reg Goodwin	Comm	4590	4590	N	39
Shawn Zimmerman	Comm/CFI	4110	4110	N	22

Comm - Commercial Pilot, ATP - Airline Transport Pilot, CFI – Certified Flight Instructor
Mil - Military Training, Inst – Instrument Rated, Yrs - Years Experience

DNRC AIRCRAFT MAINTENANCE TECHNICIAN LIST 2011

NAME	CERT.	YEARS EXP.
Ed Martin	A&P/AI	35
Nick Keilman	A&P/AI	16
Ed Virostko	A&P	40
Kevin Flanigan	A&P	17
Ray Clum	A&P	17
Russ Mason	A&P	20

A&P-Airframe and Powerplant Mechanic, AI-Aircraft Inspector

EXHIBIT 6
DATE 2/16/11
HB 468

DNRC Aircraft History

Aircraft ID	Model	Manufacturer	Year Manufactured	Acq. Date	Date Entered Into Service
N384M	206BIII	Bell	1982	1982	1982
N387M	UH-1H	Bell	1969	2003	2004
N388M	UH-1H	Bell	1973	2003	2006
N391M	185C	Cessna	1963	1982	1982
N392M	206A/B	Bell	1969	1980	1980
N394M	UH-1H	Bell	1964	1989	1989
N395M	UH-1H	Bell	1965	1992	1994
N398M	UH-1H	Bell	1965	1992	1994
N6312B	182A	Cessna	1957	1981	1981
N9067M	180H	Cessna	1970	1970	1970

EXHIBIT 6
DATE 2/16/11
HB 468

Examples of Contract Aircraft Costs For F

Montana Department of Natural Resou

Fire and Aviation

Year	Fire Name	Total Aviation Cost	Contract Cost	%	DNRC Cost	%	USFS	%
2006	Bearmouth		$375,375.94	90%			$0.00	0%
2006	Big Creek		$1,354,305.10	99%			$0.00	0%
2006	Derby		$3,853,643.43	99%			$38,664.87	1%
2006	Emerald Hills		$325,501.23	97%			$0.00	0%
2006	Lolo Steak House		$27,904.78	58%			$0.00	0%
2006	MT Jumbo		$4,168.40	26%			$0.00	0%
2006	Packer Gulch		$626,343.60	96%			$0.00	0%
2006	Pine Ridge		$552,645.35	95%			$0.00	0%
2006	Sappington Junction		$49,962.35	74%			$0.00	0%
2006	Saunders		$225,175.74	91%			$0.00	0%
2006	WoodChuck		$262,680.95	92%			$0.00	0%
2006	Dovetail		$204,475.65	92%			$0.00	0%
2006	Clarks Canyon		$836,643.68	45%			$0.00	0%
2006	Flat Tire		$2,205,978.60	100%			$7,869.61	0%
2007	BlackCat		$42,902.93	96%			$0.00	0%
2007	Chippy Creek		$54,006.28	99%			$0.00	0%
2007	Dearborn Ranch		$21,313.30	78%			$0.00	0%
2007	Jocko Lakes		$3,789,162.69	96%			$96,118.50	2%
2007	Little Wolf		$174,013.35	89%			$0.00	0%
2007	Meriwether		$2,661,955.44	97%			$7,095.75	0%
2007	Mile Marker 124		$544,313.98	95%			$2,414.40	0%
2007	Novak		$253,457.69	90%			$0.00	0%
2007	Pump Station		$78,031.58	76%			$0.00	0%
2008	Dunn Mtn		$870,460.37	86%			$0.00	0%
2008	Mt Sentinel		$2,434.23	11%			$0.00	0%
2008	Knowlton Complex		$18,227.63	23%			$0.00	0%
2008	Rehberg Ranch		$17,964.11	75%			$0.00	0%
2009	Baldy		$142,124.00	94%			$797.50	1%
2009	Copper Creek		$25,833.00	49%			$825.00	2%
2009	Macdonald Pass		$130,160.29	81%			$5,782.95	4%
2009	Indian Trail		$234,270.73	98%			$0.00	0%
2010	Stump Gulch		$191,011.00	63%			$0.00	0%
2010	Rock Creek		$14,334.01	22%			$4,007.20	6%
2010	Sleeman Creek		$2,796.00	36%			$0.00	0%
	Overall TOTAL		$20,173,577.41				$163,575.78	
	Overall Percentage	100%	94.3%		4.9%		0.8%	

NOTE: US Forest Service (USFS) Agency Costs are for USFS pilots and/or Aircraft used such as Jump Planes, Lead Planes or for Air Attack platforms. Contract costs are for resources on a National Contract administered by the USFS & BLM which include Exclusive Use and Call-When-Needed helicopters, Air Attack planes, Lead planes, and Retardant aircraft. The fires listed are a sampling from the 2006 thru 2010 fire seasons and this list does not include ALL costs or ALL fires in which contract aircraft were used for the seasons listed.

Examples of Contract Aircraft Costs For Fire Seasons 2006 thru 2010

Montana Department of Natural Resources and Conservation

Fire and Aviation

EXHIBIT 6
DATE 2/16/11
HB 468

Year	Fire Name	Total Aviation Cost	Contract Cost	%	DNRC Cost	%	USFS	%
2006	Bearmouth	$416,922.94	$375,375.94	90%	$41,547.00	10%	$0.00	0%
2006	Big Creek	$1,369,530.10	$1,354,305.10	99%	$15,225.00	1%	$0.00	0%
2006	Derby	$3,892,669.30	$3,853,643.43	99%	$361.00	0%	$38,664.87	1%
2006	Emerald Hills	$334,688.73	$325,501.23	97%	$9,187.50	3%	$0.00	0%
2006	Lolo Steak House	$47,837.78	$27,904.78	58%	$19,933.00	42%	$0.00	0%
2006	MT Jumbo	$15,805.90	$4,168.40	26%	$11,637.50	74%	$0.00	0%
2006	Packer Gulch	$655,300.10	$626,343.60	96%	$28,956.50	4%	$0.00	0%
2006	Pine Ridge	$581,183.35	$552,645.35	95%	$28,538.00	5%	$0.00	0%
2006	Sappington Junction	$67,637.35	$49,962.35	74%	$17,675.00	26%	$0.00	0%
2006	Saunders	$247,307.74	$225,175.74	91%	$22,132.00	9%	$0.00	0%
2006	WoodChuck	$285,000.45	$262,680.95	92%	$22,319.50	8%	$0.00	0%
2006	Dovetail	$221,975.65	$204,475.65	92%	$17,500.00	8%	$0.00	0%
2006	Clarks Canyon	$95,752.93	$836,643.68	45%	$33,540.00	55%	$0.00	0%
2006	Flat Tire	$21,313.30	$2,205,978.60	100%	$20,030.00	0%	$7,869.61	0%
2007	BlackCat	$870,183.68	$42,902.93	96%	$52,850.00	4%	$0.00	0%
2007	Chippy Creek	$2,233,878.21	$54,006.28	99%	$15,505.00	1%	$0.00	0%
2007	Dearborn Ranch	$69,511.28	$21,313.30	78%	$0.00	22%	$0.00	0%
2007	Jocko Lakes	$3,961,498.69	$3,789,162.69	96%	$76,217.50	2%	$96,118.50	2%
2007	Little Wolf	$196,308.35	$174,013.35	89%	$22,295.00	11%	$0.00	0%
2007	Meriwether	$2,733,308.69	$2,661,955.44	97%	$64,257.50	2%	$7,095.75	0%
2007	Mile Marker 124	$570,378.38	$544,313.98	95%	$23,650.00	4%	$2,414.40	0%
2007	Novak	$282,182.69	$253,457.69	90%	$28,725.00	10%	$0.00	0%
2007	Pump Station	$102,756.58	$78,031.58	76%	$24,725.00	24%	$0.00	0%
2008	Dunn Mtn	$1,012,267.87	$870,460.37	86%	$141,807.50	14%	$0.00	0%
2008	Mt Sentinel	$21,246.73	$2,434.23	11%	$18,812.50	89%	$0.00	0%
2008	Knowlton Complex	$81,007.63	$18,227.63	23%	$62,780.00	77%	$0.00	0%
2008	Rehberg Ranch	$23,876.61	$17,964.11	75%	$5,912.50	25%	$0.00	0%
2009	Baldy	$150,656.50	$142,124.00	94%	$7,735.00	5%	$797.50	1%
2009	Copper Creek	$52,673.00	$25,833.00	49%	$26,015.00	49%	$825.00	2%
2009	Macdonald Pass	$160,883.24	$130,160.29	81%	$24,940.00	16%	$5,782.95	4%
2009	Indian Trail	$238,878.23	$234,270.73	98%	$4,607.50	2%	$0.00	0%
2010	Stump Gulch	$302,778.50	$191,011.00	63%	$111,767.50	37%	$0.00	0%
2010	Rock Creek	$66,146.21	$14,334.01	22%	$47,805.00	72%	$4,007.20	6%
2010	Sleeman Creek	$7,741.00	$2,796.00	36%	$4,945.00	64%	$0.00	0%
	Overall TOTAL	$21,391,087.69	$20,173,577.41		$1,053,934.50		$163,575.78	
	Overall Percentage	100%	94.3%		4.9%		0.8%	

NOTE: US Forest Service (USFS) Agency Costs are for USFS pilots and/or Aircraft used such as Jump Planes, Lead Planes or for Air Attack platforms. Contract costs are for resources on a National Contract administered by the USFS & BLM which include Exclusive Use and Call-When-Needed helicopters, Air Attack planes, Lead planes, and Retardant aircraft. The fires listed are a sampling from the 2006 thru 2010 fire seasons and this list does not include ALL costs or ALL fires in which contract aircraft were used for the seasons listed.

EXHIBIT 6
DATE 2/16/11
HB 468

Draft – National Association of State Foresters Survey of State Aviation Programs for Wildfire Detection and Suppression

STATE	AVIATION RESOURCES												STAFFING & BUDGET			OPERATIONS & SAFETY			COMMENTS
	FIXED WING				ROTARY WING					RETARDANT			FTE	HELITACK SUPPORT	ANNUAL BUDGET/1000	AVIATION WORKLOAD hrs/yr	SAFETY RECORD		
	A	F	C	O	A	F	C	O	M	A	F	C					INC	ACC	
AL	4		4						U				2.0	0	--	1900	0	1	4 ADDL CONTR. PILOTS
AR	6	11							U				5.0	0	919	3000	2	0	
AZ					5				4				.5	0	--	1200	3	2	
CA	5	17				11					23		18.0	350	47,000	6742	--	2F	
FL	17	5				6			11				39	0	3,300	3734	0	1F	
HI									U				--	--	--	--	--	--	NO STATE PGM MIL ONLY
ID							2					7	6.5	10	3,500	845	0	1F	CONTRACT SHIP FATALITY
IL									4				--	--	--	--	--	--	NO STATE PGM MIL ONLY
IN									U				--	--	--	--	--	--	NO STATE PGM MIL ONLY
IA									U				--	--	--	--	--	--	NO STATE PGM MIL ONLY
KY			9						6				0	0	180	1032	0	0	DETECTION PGM ONLY
LA	12												11.0	0	1,147	3700	2	0	
MA								2	2				0	0	--	--	0	0	
MD	3				1								4.0	0	--	125	0	0	
ME	1	2			2		6		2				9.0	3	900	1000	1	0	
MI	7		3						7				5.0	0	850	2350	1	0	
MN	1	1	4				16		7	2		4	17.8	U	3,500	1167	1	0	CL-215S STATE OWNED
MS	5								U			3	5.0	0	445	2100	0	2	
MT	1	2				6		1	3				14.0	14	1,230	1600	1	0	
NC	11	4			2		3		U	5			26.75	20	3,500	2208	1	1	
ND									U				--	--	--	--	--	--	NO STATE PGM MIL ONLY
NH			1	2			4		4				--	0	18	45	0	0	
NJ	1	2				6			U				8.0	0	--	418	0	0	
NM	1												0	0	--	--	--	--	
NV					1	2							3.0	5	--	80	0	0	
NY	6				12				6				--	0	--	60	0	1	AVIATION MGD BY STATE POLICE
OH				1					U				--	3	--	40	0	0	
OR	2		3	1			9		2				5.0	--	3,500	560	0	2/2F	
SC		12							U				8.5	0	300	2462	5	0	
SD	1								4				6.0	0	--	30	0	1	
TX	5								U				0	0	130	3000	6	1	
WA			5	1		8	11		U				14.0	15	3,000	670	10	--	
WI	11											4	15.0	0	1,040	603	0	1F	
WV			5				1						0	0	155	100	0	0	BUDGET 100% CONTR. SVCES.
WY			1				1		6				5.0	7	676	120	--	--	
TOTALS	**100**	**56**	**35**	**5**	**23**	**39**	**53**	**3**	**68**	**7**	**23**	**18**	**228.05**	**427**	**75,290**	**40,891**	**33**	**10/7F**	

A=Agency Owned, F=FEPP, C=Contract, O=Other, M=Military, U=Available, but Unspecified
Safety Record INC=Incidents (Mechanical), ACC=Accidents and /F indicates fatality accidents

Draft – National Association of State Foresters Survey of State Aviation Programs

STATE	AVIATION RESOURCES												STAFFING & BUDGET		
	FIXED WING				ROTARY WING					RETARDANT			FTE	HELITACK SUPPORT	ANNUAL BUDGET/1000
	A	F	C	O	A	F	C	O	M	A	F	C			
AL	4		4						U				2.0	0	--
AR	6	11							U				5.0	0	919
AZ					5				4				.5	0	--
CA	5	17				11					23		18.0	350	47,000
FL	17	5				6			11				39	0	3,300
HI									U				--	--	--
ID							2					7	6.5	10	3,500
IL									4				--	--	--
IN									U				--	--	--
IA									U				--	--	--
KY			9						6				0	0	180
LA	12												11.0	0	1,147
MA								2	2				0	0	--
MD	3				1								4.0	0	--
ME	1	2			2		6		2				9.0	3	900
MI	7		3						7				5.0	0	850
MN	1	1	4				16		7	2		4	17.8	U	3,500
MS	5								U			3	5.0	0	445
MT	1	2				6		1	3				14.0	14	1,230
NC	11	4			2		3		U	5			26.75	20	3,500
ND									U				--	--	--
NH			1	2			4		4				--	0	18
NJ	1	2				6			U				8.0	0	--
NM	1												0	0	--
NV					1	2							3.0	5	--
NY	6				12				6				--	0	--
OH				1					U				--	3	--
OR	2		3	1			9		2				5.0	--	3,500
SC		12							U				8.5	0	300
SD	1								4				6.0	0	--
TX	5								U				0	0	130
WA			5	1		8	11		U				14.0	15	3,000
WI	11											4	15.0	0	1,040
WV			5				1						0	0	155
WY			1				1		6				5.0	7	676
TOTALS	100	56	35	5	23	39	53	3	68	7	23	18	228.05	427	75,290

A=Agency Owned, F=FEPP, C=Contract, O=Other, M=Military, U=Available, but Unspecified

Safety Record INC=Incidents (Mechanical), ACC=Accidents and /F indicates fatality accidents

Prepared by the Montana Department of Natural Resources and Management Program http://dnrc.mt.gov/forestry/fire/

EXHIBIT 6
DATE 2/16/11
HB 468

Briefing Document: Operational Effectiveness of State Owned and/or Operated Aircraft for Fire Suppression by the Montana Department of Natural Resources and Conservation

May 14, 2010

This paper outlines the position of the Montana DNRC related to the use of state owned and/or operated aircraft for fire suppression operations. Given the cost-savings, operational effectiveness and safety record of DNRC Air Operations since the inception of the program, continued use is recommended to ensure future success in state-mandated wildland fire suppression operations.

Background

The Aviation Section of Montana DNRC Fire Management operates and maintains a fleet of ten aircraft. The fleet consists of seven helicopters and three fixed-wing planes. The fixed wing aircraft are used primarily for fire patrol and personnel transportation and are located in Helena, Missoula and Kalispell. Two helicopters (Bell Jet Rangers) are stationed in Helena. One is owned by the Department of Environmental Quality (DEQ). DNRC maintains this aircraft and provides pilot services to DEQ. In return, DNRC reserves the right to use this aircraft for fire missions. The second Jet Ranger is used as a backup aircraft for additional coverage.

Five Bell UH-1H "Huey" helicopters are used to support DNRC'S fire suppression program. Three UH-1s are located in Helena, Missoula and Kalispell to provide direct protection and initial attack. The other two UH-1s are located in Helena for statewide deployment on an as-needed basis. These aircraft were acquired through the Federal Excess Property Program (FEPP), whereby states can operate federal excess property. DNRC maintains a hangar and shop facility at the Helena Airport where these former military helicopters are rebuilt and maintained. During the fire season, these aircraft typically carry a bucket, long line, and come with a support truck for refueling and supplies. They are used primarily to support DNRC initial attack firefighters.

The aviation program for DNRC started in 1967 with the acquisition of a De Havillan Beaver fixed wing aircraft. Beginning in 1967, the Department has continued to review and assess all the options available to provide aviation resources to support DNRC's mandate to provide fire protection on state and private lands. DNRC supports fire suppression activities with a mix of Department-operated and private contract aircraft. This provides the best selection of aircraft to meet specific mission requirements and afford the maximum availability of aircraft including early and late season fires. This has recently been very beneficial with the oil and gas industry activity surging, thus reducing the availability of private helicopters for firefighting.

EXHIBIT
DATE 2/16/11
HB 468

Briefing Document: Operational Effectiveness of State Owned and/or Operated Aircraft for Fire Suppression by the Montana Department of Natural Resources and Conservation

May 14, 2010

This paper outlines the position of the Montana DNRC related to the use of state owned and/or operated aircraft for fire suppression operations. Given the cost-savings, operational effectiveness and safety record of DNRC Air Operations since the inception of the program, continued use is recommended to ensure future success in state-mandated wildland fire suppression operations.

Background

The Aviation Section of Montana DNRC Fire Management operates and maintains a fleet of ten aircraft. The fleet consists of seven helicopters and three fixed-wing planes. The fixed wing aircraft are used primarily for fire patrol and personnel transportation and are located in Helena, Missoula and Kalispell. Two helicopters (Bell Jet Rangers) are stationed in Helena. One is owned by the Department of Environmental Quality (DEQ). DNRC maintains this aircraft and provides pilot services to DEQ. In return, DNRC reserves the right to use this aircraft for fire missions. The second Jet Ranger is used as a backup aircraft for additional coverage.

Five Bell UH-1H "Huey" helicopters are used to support DNRC'S fire suppression program. Three UH-1s are located in Helena, Missoula and Kalispell to provide direct protection and initial attack. The other two UH-1s are located in Helena for statewide deployment on an as-needed basis. These aircraft were acquired through the Federal Excess Property Program (FEPP), whereby states can operate federal excess property. DNRC maintains a hangar and shop facility at the Helena Airport where these former military helicopters are rebuilt and maintained. During the fire season, these aircraft typically carry a bucket, long line, and come with a support truck for refueling and supplies. They are used primarily to support DNRC initial attack firefighters.

The aviation program for DNRC started in 1967 with the acquisition of a De Havillan Beaver fixed wing aircraft. Beginning in 1967, the Department has continued to review and assess all the options available to provide aviation resources to support DNRC's mandate to provide fire protection on state and private lands. DNRC supports fire suppression activities with a mix of Department-operated and private contract aircraft. This provides the best selection of aircraft to meet specific mission requirements and afford the maximum availability of aircraft including early and late season fires. This has recently been very beneficial with the oil and gas industry activity surging, thus reducing the availability of private helicopters for firefighting.

DNRC Aircraft Resources

The primary function of DNRC'S aircraft is support for fire suppression by the agency. The majority of aircraft use is for initial attack fire suppression operations. The following aircraft were obtained through the Federal Excess Property Program and are operated within applicable guidelines. (http://www.fs.fed.us/fire/partners/fepp/):

5 UH-1H SUPER HUEYS
2 BELL BIII JET RANGERS
3 CESSNA 180 SERIES AIRPLANES

All FEPP-acquired planes and helicopters are operated as public aircraft subject to federal regulations contained in Public Aircraft Law (PL 103-411). Additionally, replacement parts are also acquired via the FEPP and military supply sources.

Use of aircraft enables the Montana DNRC to meet its mandate as defined in:

> **MCA 76-13-104. Functions of department -- rulemaking.** (1) (a) The department has the duty to ensure the protection of land under state and private ownership and to suppress wildfires on land under state and private ownership. The department shall adopt rules to protect the natural resources of the state, especially the natural resources owned by the state, from destruction by fire and for that purpose, in declared emergencies, may employ personnel and incur other expenses when necessary.

The DNRC aviation operation is funded in part by a state special revenue account whereby funds generated on a flight-hour basis are used to support maintenance and operating costs of the aircraft. Base appropriations and hourly flight rate charges are included in the executive budget and approved by the Montana Legislature. Staffing is accomplished through a combination of permanent and seasonal state employees. The aviation operation is headquartered in Helena at a state-owned facility; aircraft are stationed at field offices and on wildland fire incidents as needing during the fire season.

DNRC bills other entities (i.e. federal wildland fire agencies) for all hours of aircraft use in support of fires within their jurisdiction.

Use of State Owned versus Contract Aircraft

There has been extended dialogue about the merits of using state owned/operated equipment versus utilizing the services of private contractors. The benefits of state-owned aviation resources related to wildland fire suppression include:

- Ensured availability for fire suppression with maximum flexibility to respond to early and late-season fires;
- Pilot expertise in both wildland suppression as well as DNRC operations;

- Less workload and personnel associated with required contract administration
- Cost-savings when compared with contract aircraft (Refer to attached Legislative Auditor Memo -05/19/08, Re: Legislative Request 08L-2693)

Private Contractor Concerns regarding use of FEPP Helicopters for Fire Suppression

- State UH-1 Helicopters are being used illegally under public aircraft law due to modifications made for wildland firefighting that haven't been approved by an aeronautical engineer.

  DNRC'S UH-1 helicopters are operated as public use aircraft but are not required to be certificated by the FAA. Thus, the FAA maintenance rules and regulations do not apply; therefore, no laws are being violated. Consistent with FAA AC 00-1.1, because they are not FAA certificated, there is no formal approval process by FAA. Instead, modifications are performed in accordance with sound aeronautical data and "accepted" data. Where acceptable data was unavailable, a team of FAA Designated Engineers reviewed each modification and provided the necessary data.

  All modifications to DNRC aircraft are subject to and comply with FEPP guidelines.

- DNRC aircraft should not respond for initial attack to fires on federal protection whenever there are contract aircraft available.

  According to public aircraft law 103-411, if suitable contract aircraft is not readily available to meet an emergency and the unit of government on whose behalf the operation is conducted certifies to the Administrator of the FAA that the operation was necessary to respond to a significant and imminent threat to life or property (including natural resources), and that no service by a private contractor was reasonably available to meet the threat, then another unit of government can assist with that emergency. If suitable contract aircraft is available for a federal mission, that aircraft is utilized prior to State of Montana aircraft. Documents from the FAA as well as the Northern Rockies Mobilization Guide (Form 810) provide the background and basis for this issue. Decision and documentation responsibility in determining availability of suitable contract aircraft and/or use of state aircraft rests with the interagency dispatch centers located around the state.

- DNRC is in violation of public aircraft law by responding to fires on federal protection.

  DNRC has briefed all dispatch centers within the state of Montana to complete public aircraft dispatch form (810) in the mobilization guide prior to dispatching state aircraft on federal lands. This form is signed and certified

prior to dispatch of DNRC aircraft. As such, DNRC is not violating the public aircraft law.

- In cost-comparisons, DNRC is not representing actual operational costs because they omit costs related to year-round aviation program management.

  The hourly rate for DNRC aircraft is approved by the state legislature. DNRC cannot change this rate without legislative approval. The daily availability rate is calculated by using the figure derived from the general fund and assessment dollars DNRC receives for fixed operating costs. These fixed costs cover hangar rent, personal services and aircraft insurance. These funds ensure program continuity during years when there is little fire activity.

  A report by the State of Montana Legislative Audit Division completed 05/19/08 concludes that DNRC aircraft operate at approximately 1/3 of the cost of contract aircraft of similar certification and capability. legislative report by Auditor Joe Murray notes that DNRC aircraft are less expensive than similar contract aircraft that is approved to haul passengers.

DNRC Utilization of Private Contract Aircraft for Fire Suppression

- DNRC utilizes its aircraft primarily for initial attack, but may also use them in limited situations for extended attack.
- DNRC annually deploys private contract aircraft for suppression duties based on the tactical need for specific aircraft (i.e. heavy lift type I helicopter or large airtanker) or closest available resource.
- The amount of funds spent on private aircraft varies due to the severity of the fire season but in a below average fire season such as 2009, DNRC utilized 55 contract aircraft at an estimated cost that exceeded $100,000

Long-term viability of DNRC Aircraft

AIRCRAFT:

- 5 UH-1H SUPER HUEYS
- 2 BELL BIII JET RANGERS
- 3 CESSNA 180 SERIES AIRPLANES

All DNRC aircraft have what is known as conditional airframes. Like engines and most parts, they do not have a mandatory retirement life. DNRC aggressively maintains these airframes with respect to the mission they perform so that they will be flyable until well after the manufacturers discontinue support for them.

None of the manufacturers have announced plans to discontinue support for any of the aircraft we operate. In fact Bell has stated that they plan on supporting the UH-1H until at least 2025. Bell technical representatives indicated that replacement parts are a major part of their business and they even expect that to improve as parts

from the military cease to be available. Based on this information, DNRC should be able to maintain the current fleet of aircraft for at least 15 more years.

Conclusion

DNRC has the duty to protect State and private land from fire as defined in MCA 76-13-104. In consultation with interagency partners and local government, we have methodically developed the aviation program over the past 43 years. With oversight from the FAA, USDA Forest Service, DOI Aviation Management Directorate, and successive Montana governors and legislatures, we are confident in the program's record regarding safety, efficiency, and cost effectiveness. The Department is constantly assessing and reviewing alternatives to provide this service to the tax payer in the safest, most effective and cost efficient manner. The current DNRC program, which relies upon a combination of agency-operated and contract aircraft is justified and has proven to be a successful model. Continuing our current operation is both desired and justified as a sound investment and a measurable benefit to Montana citizens.

LEGISLATIVE AUDIT DIVISION

Scott A. Seacat, Legislative Auditor
Tori Hunthausen,
Chief Deputy Legislative Auditor

Deputy Legislative Auditors:
James Gillett
Angie Grove

EXHIBIT 60
DATE 2/16/11
HB 468

MEMORANDUM

TO: Scott Seacat, Legislative Auditor

FROM: Joe Murray, Performance Audit Manager

DATE: May 27, 2008

RE: Hiring contract helicopters for fire suppression and operating costs for Department of Natural Resources and Conservation helicopters, Legislative Request 08L-2693

INTRODUCTION

The Department of Natural Resources and Conservation (DNRC) Air Operations Section, located within the department's Forestry Division, provides aviation support for all DNRC functions. Aviation Section responsibilities include providing "mission-capable" aircraft and support, seasonal pilot hiring and training, development, maintenance and operation of aircraft, and providing training for ground-based firefighters who work in coordination with air operations. The Aviation Section is based at the Helena Airport, where the program maintains a hangar for aircraft development, maintenance, and storage. The Air Operations Section manages a fleet of ten aircraft including five Bell UH-1 (Huey) helicopters, two Bell Jet Ranger Helicopters, and three Cessna 180 airplanes. The five Huey helicopters are used for the majority of DNRC's initial attack fire efforts.

We were requested to provide additional information regarding DNRC's Huey helicopter costs and usage to supplement information discussed in a previous legislative request memorandum dated October 18, 2007 (08L-2588). Specifically, we were asked to provide the following information:

- Determine how DNRC calculates its hourly flight rate and daily availability rate for its Huey helicopters and if these rates appears reasonable. For the October 18, 2007 memorandum, DNRC provided an hourly flight rate of $1,075 per hour and a daily availability rate of $263 per day.
- Provide some additional cost comparisons between DNRC's Huey helicopters and contract helicopters.
- Describe how contract helicopters are hired for fire suppression activities and determine the number of times DNRC requested assistance from Montana helicopter contractors during the 2007 fire season but contractors were not available.

The following sections discuss these topics in more detail.

HOW IS DNRC'S HOURLY FLIGHT RATE CALCULATED?

Whether a helicopter is privately or publically owned, there are costs directly related to the number of hours the aircraft is flown. These costs are paid by charging users of the aircraft an hourly flight rate to

cover the costs of using the aircraft. For DNRC aircraft, these rates help keep its helicopters airworthy and ready for initial attack of wildfires. DNRC's hourly flight rate is a proprietary cost (i.e. a cost of doing business) charged to users of the aircraft to recover the expenses of operating the aircraft. For fiscal year 2008, DNRC's hourly flight rate for its Huey helicopters is $1,075 per hour. This rate increased from $875 per hour in fiscal year 2007.

DNRC's process for calculating hourly rates for its Huey helicopters are similar to procedures outlined in the U.S. Government Aircraft Cost Accounting Guide. When projecting the department's hourly flight rate for the Huey's, DNRC considers several cost factors including fuel and oil, annual maintenance, projected repairs, engine overhaul, part replacement schedules, DNRC parts inventories, etc. According to DNRC officials, there are always uncertainties when forecasting future expenses and projecting hourly rates. For example, unforeseen events such as Federal Aviation Administration directives, unplanned maintenance/repairs, fluctuations in fuels costs, or the length and severity of the fire season can create challenges in pinpointing accurate hourly flight rates. Rising fuel cost was a major contributing factor in the department increasing the hourly flight rate in fiscal year 2008.

DNRC Hourly Flight Rates Are Commensurate With Costs

Section 17-8-101 (6), MCA, requires the Legislative Audit Division (LAD) to audit fees and charges for Internal Service Funds administered by state agencies to verify they are commensurate with costs. Every two years, LAD reviews DNRC's hourly flight rates for all DNRC aircraft, including the Huey helicopters, as part of its department-wide financial-compliance audit. Previous LAD financial-compliance audit work indicates DNRC has done a good job in projecting hourly flight cost of its aircraft. We reviewed the last three DNRC financial-compliance audit reports issued by LAD which date back to November 2002. These audits evaluated hourly rates for fiscal years 2001-02 through 2005-06. All three audit reports noted Internal Service Fund fees charged for DNRC aircraft were commensurate with costs to operate the aircraft. This includes the hourly rate for the department's Huey helicopters. DNRC is presently undergoing another financial-compliance audit and a report is scheduled for November 2008. As with previous audits, LAD staff are evaluating whether current fees remain commensurate with costs.

DAILY AVAILABILITY RATE/COST

Daily availability is the daily cost that is paid to have aircraft available for fire suppression activities. It generally covers basic fixed costs (insurance, crew costs, overhead, etc) directly related to the aircraft so it is ready to fly. For private helicopters under contract for fire suppression, the federal government (who is responsible for entering into national contracts with private helicopter vendors) negotiates the daily availability rate into the contract with the owner of the aircraft. In addition to hourly flight rates, the contractually established daily rate is paid each day contract helicopters are hired. DNRC helicopters also have daily costs associated with the aircraft for being available for fire suppression activities. However, an actual daily rate is not typically tracked by specific DNRC aircraft because all department aircraft (fixed costs) are managed under a single budget. The following section discusses this topic in more detail.

DNRC's Reported Daily Availability Rate of $263 is for DNRC's Entire Fleet

In LAD's Legislative Request Memorandum (08L-2588) issued in October 2007, DNRC reported its daily availability rate for the Huey helicopters as $263 per day. Because DNRC does not specifically track daily availability rates for individual aircraft, the department calculated the rate when LAD requested the information last October. Upon further discussion with DNRC, we determined this was the daily availability rate for DNRC's entire fleet of aircraft, not just the Huey helicopters, since the Air Operations Section manages all of the department's aircraft from the same pool of money. According to DNRC officials, the Air Operations Section operates on a legislatively approved annual budget of approximately $959,896 to manage its fleet of 10 aircraft. This budget covers DNRC's fixed costs such as

aircraft maintenance, hangar rent, aircraft insurance, personal services for staff and management, etc. Unlike hourly flight costs where the department tracks expenditures related to each type of aircraft, the department does not compile certain information that would readily allow the department to determine a daily availability rate for individual types of aircraft. For example, DNRC mechanics may work on both DNRC's fixed-wing aircraft and its helicopters on the same day, but time spent on each aircraft is not tracked since the mechanics time is spent from one Air Operations Section personal services account.

DNRC officials indicated they also calculated the daily availability rate provided for the previous legislative request based on aircraft being available 365 days. However, aircraft are not available every day of the year because they are down for maintenance or repairs for some period of time during the year. Basing daily availability rates on aircraft being available every day of the year does not provide for an accurate rate to be calculated. In subsequent follow-up interviews, DNRC officials said the Huey helicopters are not available approximately 30 days each year due to scheduled maintenance, repairs, etc.

Additional Cost Comparisons Show DNRC's Helicopters Remain a Cost Efficient Tool

As part of this request, we were asked to provide some additional cost comparisons of DNRC Huey helicopters to similar contract helicopters. As noted, while hourly cost information is available, there is limited information available directly related to DNRC's daily availability costs for the Huey helicopters. However, using information that is available, we were able to provide some approximate cost scenarios related to DNRC's Huey helicopters. To ensure we provided potential cost scenarios at the "high-end" of the cost scale, we based calculations using the following factors:

- DNRC's five Huey helicopters were the only aircraft used for our calculations. The other five DNRC aircraft were not considered.
- DNRC's entire air operations budget of $959,896 was used to calculate the daily availability rate for the Huey's. No reductions or adjustments were made to the budget to compensate for five fewer aircraft. There are costs associated with maintaining these other aircraft, and not including these costs increases the daily availability rate for the Huey helicopters.
- Daily availability was calculated based on both year round availability and availability only during the fire season. For year round availability, we made the assumption the Huey's were available 335 days during the year (365 days less 30 days, on average, each aircraft is not available due to repairs and maintenance). We used a 90-day time frame for fire season availability, which is the core of the fire season and consistent with when contract helicopters are generally available for fires. According to DNRC officials, this is a conservative methodology because DNRC aviation resources frequently respond to fires outside the core 90-day fire season time period.
- Nationally contracted standard category call-when-needed type II helicopters rates were used for comparison with DNRC's Huey helicopters. These contract aircraft are similar to the department's Huey's. For example, both aircraft are certified to carry passengers and have similar performance capabilities. DNRC officials indicated it is difficult to make specific cost comparisons between DNRC and contract helicopters for a 90-day contract without soliciting Request-for-Proposals from contractors on what their actual costs would be. The U.S. Forest Service establishes three-year contracts for call-when-needed helicopters. DNRC officials provided us with an example of contractors for the most recent contract information available (contract period 2005, 2006, and 2007). We used national contract rates for the contract award period 5/1/07 through 4/30/08. Appendix A provides information regarding the national contracts used for our comparison.

The following table provides a cost comparison between DNRC's Huey helicopters and three nationally contracted helicopters based on the factors discussed above. The table also provides a comparison of DNRC's hourly flight rates (actual rates) to hourly contracted rates for three contracted helicopters.

Table 1
Helicopter Cost Comparison
DNRC Huey Helicopter & Call-When-Needed Standard Category Type II Helicopters

Cost Factor	DNRC Helicopters *	National Contract Helicopter #1 *	National Contract Helicopter #2 *	National Contract Helicopter #3 *
Hourly Flight Rate	$1,075/hour	$2,400/hour	$3,696/hour	$1,850/hour
Daily Availability Rate **	$573/day based on 335-day availability $2,133/day based on 90-day availability	$6,328/day	$6,384/day	$6,048/day

* Contractor rates based on national contract award period of 5/1/07 through 4/30/08. DNRC daily availability rates were calculated based on current budget to manage 10 aircraft.
** Contract aircraft daily availability generally based on 90-day availability during core fire season.

Source: Compiled by the Legislative Audit Division from DNRC records and national helicopter contract information.

As the table shows, using the new criteria to readjust DNRC's hourly flight and daily availability rates, DNRC's Huey helicopters remain a cost efficient fire suppression tool. According to DRNC officials, this is in large part because the department achieves significant cost-savings by acquiring helicopter frames and parts through the Federal Excess Property Program and the ability for all maintenance and repairs using department staff. It is important to note the three contract helicopters used in Table 1 do not necessarily reflect contract prices for all national contract helicopters. DNRC officials indicated the U.S. Forest Service negotiates contracts with individual contractors so rates will vary by contractor. National call-when-needed contract rates for the next three-year time period was not available at the time this request was completed. DNRC officials believe this analysis shows continued operation of it helicopter program makes good business and operational sense for the state of Montana.

HOW ARE CONTRACT HELICOPTERS HIRED FOR FIRE SUPPRESSION

There are two main phases of fire suppression; initial attack and project fires. The following sections discuss the role of DNRC and contract helicopters in each phase. The sections also provide information on how contract aircraft are hired for fire suppression assistance.

DNRC Helicopter Program is an Important Initial Attack Tool

Recent legislative sessions recognized the importance of DNRC's helicopter program and provided increased funding to enhance the program and strengthen the department's initial attack capabilities. Resource levels now provide DNRC with the capability to base Huey helicopters in Missoula, Kalispell, Helena, and Eastern Montana during the fire season. The remaining Huey aircraft remains in Helena and is assigned to wherever the need is greatest.

DNRC officials said because of the unpredictability of the fire season and because the department has its five Huey helicopters for initial attack of wildfires, it does not generally need to request or use contract helicopters to assist with initial attack efforts. However, DNRC officials said when fire danger and activity stretches DNRC resources thin, they will reach out to the private sector and contact helicopter contractors for assistance. However, department staff indicated contractors are generally not available because it is the height of the fire season in the Northern Rockies and Western United States and contract

aircraft are often assigned elsewhere. The extent DRNC has contacted contract helicopters and or the number of times contractors are not available to provide assistance is not information the department compiles. DNRC only tracks resources that were used on fires.

DNRC officials said when contract aircraft are hired to assist with initial attack they will only hire contractors already under national contract. This ensures DNRC hires contractors (aircraft and pilots) which meet national fire standards. DNRC will also pay the contractor the daily and hourly rates specified in the national contract. During the 2007 fire season, DNRC was successful in contracting with one private helicopter contractor using these criteria. The helicopter hired was a type III light helicopter, which is a smaller aircraft than the DNRC Huey helicopters. The hourly rate for this aircraft was $1,160 per hour.

Contract Aircraft Are Used on Project Fires

When a fire escapes initial attack efforts, initial attack resources such as DNRC ground crews and aircraft, are eventually replaced by other resources and returned to their initial attack responsibilities. When a fire becomes large (i.e. project fire) and extended attack is necessary, an interagency Incident Management Team (IMT) assumes responsibility for managing fire suppression efforts. While a fire's origination point helps define which agency (local, state, federal) administers the fire and how fire costs are assigned, the IMT is responsible for making decisions regarding fire suppression efforts such as tactics employed, the type and number resources needed, etc. This includes making a determination on the type and number of helicopters needed for suppression efforts. For project fires, fire suppression resources such as helicopters, are typically private sector aircraft under national contract with the federal government. Working under the direction of DNRC line officers, the IMT responsible for managing fire suppression efforts decide what types of resources (type and number of helicopters, engines, crews, etc.) are needed for suppression efforts. DNRC line officers can approve or disapprove IMT tactical or resource decisions if line officers do not believe the IMT's decisions are in the best interest of the state.

When an IMT determines what helicopter resources are needed, an order is placed through the dispatch center, and the process to fill the request begins. While an order for a helicopter is generally placed through a zone dispatch center, such as the Missoula Interagency Dispatch Center, the request is ultimately forwarded to the National Interagency Coordination Center (NICC) in Boise, Idaho because contract helicopters are controlled at the national level. NICC is the responsible entity for coordinating and filling orders for nationally contracted resources, such as helicopters. The determination as to which contract helicopters will get assigned to a fire will essentially depend on whether they have the specific type of resource needed, their geographic proximity to the fire, and if the contract helicopter is available for use. DNRC officials indicated NICC uses a national resource database, to locate the "closest, available, appropriate helicopter resource" that meets the IMT's needs. If a Montana contract aircraft meeting the resource order is the closest, available, appropriate resource, they would be dispatched to the fire. If Montana contract helicopters are not available for some reason (assigned to another fire, aircraft is down for repairs, etc.) or there are no Montana contract aircraft specifically meeting the IMT's needs, NICC will go to the next contractor on the list that is "closest, available, appropriate" resource which meets the IMT's needs. The resource that is eventually dispatched may come from anywhere in the country. Since helicopters are a national resource which are dispatched via a national dispatch and prioritization process. This can often result in Montana helicopter contractors working fires in other states even when Montana is experiencing its own fires. The DNRC officials indicated if national contract helicopters meeting the IMT's needs are already assigned to fire locations in the general area, those helicopters may be temporarily or permanently reassigned to the new fire.

Montana DNRC Fores

EXHIBIT 6
DATE 2/16/11
HB 468

FIRE AND AVIATION MANAGEMENT

Aviation

Equipment Development and Support

Fire Suppression

National Fire Plan

Training

Aviation

Providing Professional Aviation Support for all DNRC Functions

Fire and Aviation Management

DNRC AIR OPERATIONS

Montana Department of Natural Resources and Conservation
Forestry Division
Fire and Aviation Management Bureau
Aviation

The Department of Natural Resources and Conservation's (DNRC) Aviation Section provides professional aviation support for all DNRC functions and for the Remediation Division of the Montana Department of Environmental Quality. Program responsibilities include providing mission-capable aircraft and aircraft support; seasonal pilot hiring and training; development, maintenance, and operation of aircraft; and providing training for ground-based firefighters who work in coordination with air operations.

DNRC's fleet of ten aircraft consists of three Cessna 180 airplanes, five Bell UH–1 helicopters, and two Bell Jet Ranger helicopters. These aircraft and their pilots and crews help protect the 5.2 million acres for which the DNRC has direct protection responsibilities, and help provide secondary protection to an additional 45 million acres protected through the State/County Cooperative Fire Program. The DNRC's Aviation Section is based at the Helena Airport, where the program maintains a hanger for aircraft development, maintenance, and storage.

Accomplishments
FY 2009

Fire detection	422.3 hours
Fire suppression	615.8 hours
Water delivered	1,619,824 gallons
Fire administration	19.5 hours
Fire training	16.5 hours
Non-fire missions	19.5 hours
Total hours	1,094

Goal

Maintain pilot proficiency and provide mission-capable aircraft to support Departmental missions efficiently and safely.

The Importance of Air Operations to Containing the Costs of Wildfires

DNRC Air Operations are integral to the implementation of the agency's initial wildfire attack strategy. DNRC's goal is to contain 95% of direct protection wildfires before they reach 10 acres in size. During the past decade, dedicated firefighters have actually exceeded this goal, successfully containing 96% of fires before they reached 10 acres in size. Successful initial attack does more than just suppress fires; it also minimizes risks to firefighters, lives, property, and natural resources, and helps contain the costs of fire suppression. Most of Montana's fire suppression costs are incurred in fighting the 4% of fires that exceed 10 acres.

DNRC's Cessna airplanes are used for fire detection patrol flights during the wildfire season, and its helicopters are equipped to carry water to fires. The larger UH–1 helicopters can also transport firefighting ground crews. Helicopters and their crews are often the first to arrive at a wildfire, and thus have a key role in initial attack and achieving the agency's fire suppression goals. Thus, through its fire detection patrols and the rapid initial attacks made possible by its aircraft, the Aviation Section plays a central role in controlling wildfires and helping to save tax dollars.

DNRC AIR OPERATIONS

- **Safe:** DNRC has had an aviation program for over 40 years. The aviation program has logged over 50,000 flight hours with no heliopter accidents and one airplane accident and no injuries.
- **Effective:** Initial attacks have contained 96% of wildfires before they reach 10 acres in size.
- **Economical:** Use of equipment loaned through the Federal Excess Property Program saves Montana taxpayers millions of dollars.

Helicopter Cost Comparison

DNRC Huey Helicopter & Call-When-Needed Standard Category Type II Helicopters

Cost Factor	DNRC Helicopters	National Contract Helicopter #1*	National Contract Helicopter #2*	National Contract Helicopter #3*
Hourly Flight Rate	$1,075/hour	$2,400/hour	$3,696/hour	$1,850/hour
Daily Availability Rate **	$573/day based on 335-day availability $2,133/ day based on 90-day availability	$6,328/day	$6,384/day	$6,048/day

*Contractor rates based on national contract award period of 5/1/07 through 4/30/08. DNRC daily availability rates were calculated based on current budget to manage 10 aircraft.

**Contract aircraft daily availability generally based on 90-day availability during core fire season

Source: Compiled by the Legislative Audit Division from DNRC records and national helicopter contract information.

As the table shows, using the new criteria to readjust DNRC's hourly flight and daily availability rates, DNRC's Huey helicopters remain a cost efficient fire suppression tool. According to DNRC officials, this is in large part because the department achieves significant cost-savings by acquiring helicopter frames and parts through the Federal Excess Property Program and the ability for all maintenance and repairs using department staff. It is important to note the three contract helicopters used in in the above table do not necessarily reflect contract prices for all national contract helicopters. DNRC officials indicated the U.S. Forest Service negotiates contracts with individual contractors so rates will vary by contractor. National call-when-needed contract rates for the next three-year time period was not available at the time this request was completed. DNRC officials believe this analysis shows continued operation of its helicopter program makes good business and operational sense for the state of Montana.

Aircraft

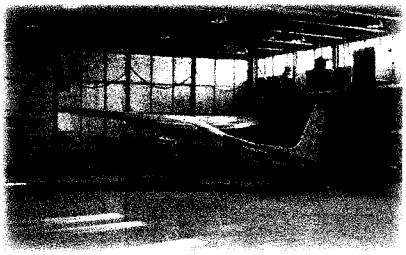
The Aviation Section operates and maintains three types of aircraft: five Bell UH–1 ("Huey") helicopters, two Bell Jet Ranger helicopters, and three Cessna 180 airplanes.

Bell UH–1 ("Huey") helicopters are used primarily for rapid initial attack fire suppression. These helicopters can carry a firefighting crew to work on the ground in tandem with aviation resources. Each helicopter is equipped with a 324 gallon water bucket and 150 feet of long line that can deliver water or equipment to firefighters on the ground. The newest DNRC UH–1 goes wherever need is greatest; the others are based in Missoula, Helena, and Kalispell.

The Bell Jet Ranger is smaller than the UH–1 and carries a smaller payload, but is still very effective for fire reconnaissance and initial attack in lighter fuels. These helicopters are equipped with a 100 gallon water bucket and long line. DNRC owns one Jet Ranger and has access to another owned by the Montana Department of Environmental Quality. Both helicopters are based in Helena.

Bell UH–1

Bell Jet Ranger, foreground; Bell UH–1 in background



Cessna 180

Fixed-wing Cessna 180s are used for fire detection patrol flights. Aerial patrols are an efficient means to locate new fires and communicate information to fire managers, who can then send appropriate suppression resources to the fire. Patrols are flown after periods of thunderstorm activity to detect lightning-ignited fires, and are often flown daily during periods of increased fire activity or fire danger. DNRC's three planes are based in Missoula, Helena, and Kalispell.

Development and Maintenance

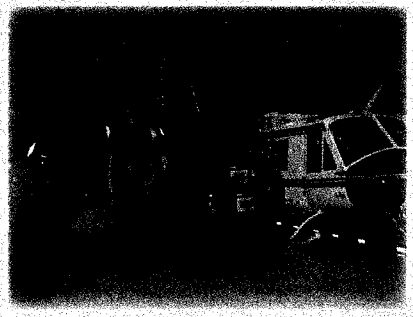
DNRC's five Bell UH–1 helicopters and Bell Jet Ranger were acquired through the Federal Excess Property Program (FEPP). Through this program, used federal property is acquired by the USDA Forest Service for loan to the states for use in wildland fire protection. By acquiring helicopters and parts through the FEPP, DNRC saves millions of dollars for Montana taxpayers. Montana is one of just a handful of states to use aircraft from the FEPP in its wildfire fighting program, and is able to do so through a combination of 40 years of experience with the FEPP and the knowledge and skills its staff bring to the task.

When the Aviation Section acquires a used helicopter through the FEPP, it totally disassembles the aircraft to assess needs for repair and parts replacement, and rebuilds what is functionally a new helicopter. The rebuilding process also includes the numerous modifications necessary to equip the helicopter for firefighting.

Opposite, top photo: Annual maintenance work on a UH–1.

Opposite, bottom photo: Maintenance work on the tail section of the helicopter.

Below, from left to right: Bell UH–1 helicopter that has not yet been developed; UH–1 developed in 2004 but not yet painted; completed UH–1.



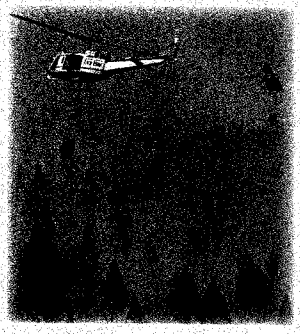
Firefighting

Aviation resources have key roles in wildfire detection and suppression. DNRC's Cessnas make daily patrol flights for wildfire detection during the wildfire season. When fires are detected, DNRC's helicopters can transport water to help suppress the fire and also transport on-the-ground firefighting crews to the scene. The minimum "helitack" crew is a pilot and helicopter manager, an on-the-ground firefighter who coordinates between aviation and firefighting. Each UH–1 can carry a total crew of 8, including the pilot and helicopter manager. The helicopters can transport a bucket of water every 4 minutes, on average. A UH–1 with a 324-gallon bucket can transport an average of 38,800 gallons a day.

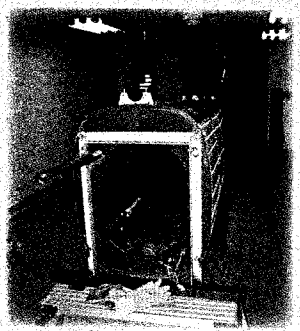
Personnel and Training

The Aviation Section staff includes three full-time pilots and six full-time mechanics. Because of the seasonality of wildfires, most of Aviation's positions are seasonal. Aviation hires a seasonal pilot for each of the UH–1 helicopters and 10 part-time relief pilots that fly the Cessnas and Bell Jet Rangers. The full-time pilots provide relief to the other pilots in the program as needed.

Aviation looks for pilots with a minimum of 1,500 in-command flight hours and 200 hours of experience flying a UH–1 for its seasonal pilots. Most new pilots require additional training to develop the skills needed for firefighting. Much of the initial training is devoted to learning how to safely and effectively use the long line and water bucket, a challenging skill to master.



Long line and water bucket in use, as seen from inside a helicopter.



The most recently developed of the UH–1 helicopters DNRC has obtained through the FEPP was developed in 2004 and 2006. The cost to develop this helicopter was $266,000, far less than the $3 million cost of a new helicopter or a used helicopter that had been redeveloped commercially to a comparable condition and specifications.

DNRC also obtains many parts for its helicopters through the FEPP. The Aviation Section acquired 12 Cobra helicopters in 2003 for use of parts in maintenance of the UH–1 helicopters. The total parts value was $18 million, but DNRC's cost was only $70,000 for shipping the helicopters from New York to Montana.

Each of DNRC's aircraft undergoes complete annual maintenance according to aviation industry standards. Each aircraft is prepared to perform flawlessly not only in the inherently risky business of flying, but also in the especially hazardous conditions surrounding wildfires.

DNRC AIR OPERATIONS

- **Safe:** DNRC has had an aviation program for over 40 years. The aviation program has logged over 50,000 flight hours with no heliopter accidents and one airplane accident and no injuries.
- **Effective:** Initial attacks have contained 96% of wildfires before they reach 10 acres in size.
- **Economical:** Use of equipment loaned through the Federal Excess Property Program saves Montana taxpayers millions of dollars.

Helicopter Cost Comparison

DNRC Huey Helicopter & Call-When-Needed Standard Category Type II Helicopters

Cost Factor	DNRC Helicopters	National Contract Helicopter #1*	National Contract Helicopter #2*	National Contract Helicopter #3*
Hourly Flight Rate	$1,075/hour	$2,400/hour	$3,696/hour	$1,850/hour
Daily Availability Rate **	$573/day based on 335-day availability $2,133/ day based on 90-day availability	$6,328/day	$6,384/day	$6,048/day

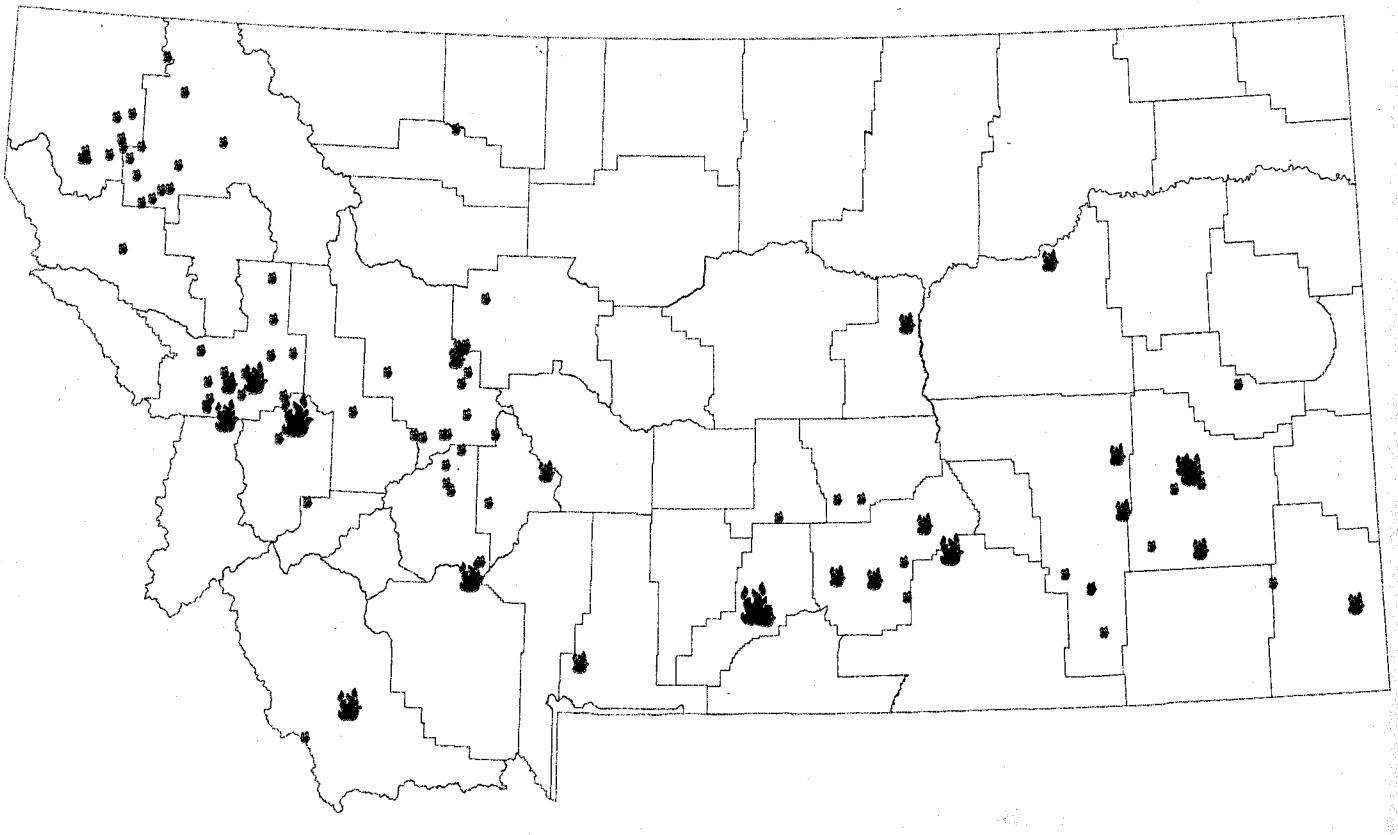
*Contractor rates based on national contract award period of 5/1/07 through 4/30/08. DNRC daily availability rates were calculated based on current budget to manage 10 aircraft.

**Contract aircraft daily availability generally based on 90-day availability during core fire season

Source: Compiled by the Legislative Audit Division from DNRC records and national helicopter contract information.

As the table shows, using the new criteria to readjust DNRC's hourly flight and daily availability rates, DNRC's Huey helicopters remain a cost efficient fire suppression tool. According to DNRC officials, this is in large part because the department achieves significant cost-savings by acquiring helicopter frames and parts through the Federal Excess Property Program and the ability for all maintenance and repairs using department staff. It is important to note the three contract helicopters used in in the above table do not necessarily reflect contract prices for all national contract helicopters. DNRC officials indicated the U.S. Forest Service negotiates contracts with individual contractors so rates will vary by contractor. National call-when-needed contract rates for the next three-year time period was not available at the time this request was completed. DNRC officials believe this analysis shows continued operation of its helicopter program makes good business and operational sense for the state of Montana.

Water Delivered by DNRC Air Operations Helicopters 2008 Fire Season



Gallons of Water Delivered to Wildfires*

- 300 - 25,000
- 25,001 - 60,000
- 60,001 - 125,000
- 125,001 - 250,000

*A total of 1,619,824 gallons of water was delivered by DNRC helicopters to fire suppression operations carried out through the Direct Protection Program and the State/County Cooperative Fire Program. Because many fires occurred in close proximity, the clustering of symbols on the map prevents displaying the location of a number of smaller fires where water was delivered.

Top cover photo of the Robert Fire by Karen Nichols, *Daily Inter Lake*, Kalispell, MT.

Persons with disabilities who need an alternative, accessible format of this document should contact DNRC at Department of Natural Resources and Conservation, Forestry Division, 2705 Spurgin Road, Missoula, MT 59804-3199. Phone (406) 542-4300 or fax (406) 542-4217. 500 copies of this document were published at an estimated cost of $2.29 per copy. The total cost of $1,146 includes $1,146 or printing and $0 for distribution.